

**ABSTRACT OF THE INVENTION**

The present invention relates to screening methods for oxidation enzymes, particularly mono- and dioxygenases. According to the methods of the invention, a product of an oxidation reaction is converted into a phenol or a catechol, which is easily detected by a Gibbs assay. This conversion allows for a sensitive and efficient assay. Both high-throughput liquid-phase and solid-phase methods using these principles are provided. Also described are methods for detecting phenolic ether-products and sulfhydryl products from oxidation reactions, also using a Gibbs assay.

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